REMARKS

The Applicants would like to thank Examiner El Arini for participating in the telephone interview with the Applicants' attorney on September 7, 2006. The substance of the interview is as follows.

During the interview, Applicants' attorney reiterated the position that the Elsawy reference (U.S. Patent No. 6,328,809) fails to teach or suggest "simultaneously supplying the first supply of drying fluid and the combination of the second supply of drying fluid and the decontaminating fluid," and that the Elsawy reference further fails to teach or suggest "controlling a first ratio of drying fluid to decontaminating fluid in the process chamber by controlling the first rate of supply of the first supply of drying fluid and independently controlling the second rate of supply of the second supply of drying fluid so that the first ratio of drying fluid to decontaminating fluid in the process chamber is different than a second ratio of drying fluid to decontaminating fluid in the combination of the second supply of the drying fluid and the decontaminating fluid at the outlet of the fluid tank," as claimed in independent claim 26.

The general thrust of Examiner El Arini's principal assertions was that Elsawy discloses physical elements that appear to be similar to elements of the claimed present invention. In particular, Examiner El Arini cited Elsawy as teaching multiple sources of N2 gas that can be supplied to a vessel 12. In response, Applicants' attorney explained that the claimed method is different than Elsawy because none of the N2 sources of Elsawy is a "first supply of drying fluid" that is simultaneously supplied with a "combination of the second supply of drying fluid and the decontaminating fluid," as claimed. In addition, Applicants' attorney explained that there is no teaching or suggestion in Elsawy that any of the N2 sources of Elsawy are independently controlled so that a "first ratio of drying fluid to decontaminating fluid" in the process chamber is "different than" a "second ratio of drying fluid to decontaminating fluid in the combination of the second supply of the drying fluid and the decontaminating fluid at the outlet of the fluid tank," as claimed.

The general outcome of the interview is summarized in the Interview Summary at page 3 prepared by Examiner El Arini and mailed on September 15, 2006. In addition, Examiner El Arini suggested that Applicants submit an Amendment that includes a detailed explanation clarifying the distinctions between the present invention as claimed and the Elsawy reference. Accordingly, it is believed that the present Amendment addresses the questions and issues that were raised by Examiner El Arini during the interview with regard to distinctions between the Applicants' present invention and cited prior art, and it is further believed that the application is placed in condition for allowance. Such allowance is respectfully requested.

Claims 26-38 are pending in the present application. Claims 26 and 34 are amended above. No new matter is added by the claim amendments. Entry is respectfully requested.

Claims 26-38 are rejected under 35 U.S.C. 112, second paragraph, for reasons stated in the Office Action at page 2, sections 2-3. Claims 26 and 34 are amended above in a manner believed to overcome the rejections. Entry of the amendments and removal of the rejections are respectfully requested.

Claims 26-38 remain rejected under 35 U.S.C. 103(a) as being unpatentable over Elsawy, *et al.* (U.S. Patent No. 6,328,809 - hereinafter "Elsawy"). In view of the amendments to independent claim 26 and the following remarks, reconsideration and removal of the rejections, and allowance of the claims, are respectfully requested.

It is submitted that Elsawy fails to teach or suggest a "first supply of drying fluid" at a "first rate of supply being provided at the same time as" a "second supply of drying fluid" at a "second rate of supply," as claimed in amended independent claim 26. In addition, it is submitted that Elsawy fails to teach or suggest "simultaneously supplying the first supply of drying fluid and the combination of the second supply of drying fluid and the decontaminating fluid to a process chamber to decontaminate semiconductor wafers contained therein," as claimed in amended independent claim 26. In addition, it is submitted that Elsawy fails to teach or

suggest "controlling a first ratio of drying fluid to decontaminating fluid in the process chamber by controlling the first rate of supply of the first supply of drying fluid and independently controlling the second rate of supply of the second supply of drying fluid so that the first ratio of drying fluid to decontaminating fluid in the process chamber is different than a second ratio of drying fluid to decontaminating fluid in the combination of the second supply of the drying fluid and the decontaminating fluid at the outlet of the fluid tank, to optimize the decontamination of the semiconductor wafers," as claimed in amended independent claim 26.

Elsawy discloses a method of treating and drying the surface of an object (see Elsawy Abstract). The method disclosed in Elsawy includes a drying step comprising an initial IPA step and a subsequent volatilizing step (see Elsawy, FIGs. 2-3 and column 5, lines 38-43). In the IPA step, IPA vapor is carried from an IPA chamber 16 into a vessel 12 by heated N2 gas supplied by an N2 source 54 (see Elsawy, FIG. 2, column 5, lines 38-40, and column 6, lines 57-62). In the subsequent volatilizing step, condensed IPA remaining on the wafers from the previous IPA step is volatilized (see Elsawy, FIG. 2 and column 5, lines 40-41). The two-step method (IPA step, volatilizing step) of Elsawy is similar to the conventional method disclosed in FIG. 1 and the Background of the Invention section of the present specification. In fact, Elsawy (U.S. Patent No. 6,328,809) is cited in the Background of the Invention section of the present specification as teaching the conventional method. In the conventional method, during the IPA step as illustrated at FIG. 1 of the present specification, valve 15B is closed and valves 15A and 15C are opened so that the N2 gas can be used to drive the combined N2/IPA gas into the chamber 20. Subsequently, during the volatilizing step, valve 15B is opened and valves 15A and 15C are closed so that the N2 source is applied directly to the process chamber 20.

There is no teaching or suggestion in Elsawy of the initial IPA step and the subsequent volatilizing step of Elsawy being performed simultaneously to "simultaneously" supply a "first supply of drying fluid" and a "combination of" a "second supply of drying fluid" and "decontaminating fluid" to a "process chamber to decontaminate semiconductor wafers contained therein," as claimed in amended independent claim 26. Instead, Elsawy specifically

discloses at column 5, lines 39-42 teaches that the volatilizing step is performed following the initial IPA step. In other words, the volatilizing step of Elsawy disclosed at column 5, lines 40-43 of the Elsawy reference is analogous to the volatilizing step disclosed at page 2, lines 7-9 of the Background of the Invention section of the present specification, in that it involves the direct application of N2 fluid to the chamber following the IPA step.

The Elsawy volatilizing step is analogous to what is referred to as a "drying" step in the present specification (see, for example, step 410 of FIG. 9, and page 8, lines 1-5 of the present specification). The drying step is performed following the decontamination procedure, as claimed in claim 38: "...following simultaneously supplying the first supply of drying fluid and the combination of the second supply of drying fluid and the decontaminating fluid to the process chamber, supplying a drying fluid into the chamber for drying the semiconductor wafers." Thus, Applicants have likewise disclosed a separate drying step, which is referred to in Elsawy as a "volatilizing step." Further, Applicants note that the drying/volatilizing step is performed for the purpose of "volatizing any condensed IPA remaining on the wafers" (see page 9, lines 24-27 of the present specification), and therefore is performed following the initial application of the IPA/N2, i.e., the claimed "simultaneously supplying" of the "first supply of drying fluid and the combination of the second supply of drying fluid and the decontaminating fluid to a process chamber."

Therefore, in response to statements made in the Response to Arguments section of the Office Action at page 4, it is irrelevant whether Elsawy simultaneously cleans the surface of a wafer and volatilizes condensed decontaminated fluid remaining on the wafers, because, as stated above, Applicants teach a separate drying step (arguably analogous to the volatilizing step of Elsawy) following the step of "simultaneously supplying the first supply of drying fluid and the combination of the second supply of drying fluid and the decontaminating fluid to the process chamber," as claimed.

In addition, contrary to statements made in the Office Action at page 4, Response to

Arguments section, the Applicants maintain their assertion that there is no teaching or suggestion in Elsawy of "controlling a first ratio of drying fluid to decontaminating fluid in the process chamber by controlling the first rate of supply of the first supply of drying fluid and independently controlling the second rate of supply of the second supply of drying fluid...," as claimed in amended independent claim 26.

Applicants note that the Office Action at page 3, first paragraph, attempts to explain why Elsawy discloses the limitations of independent claim 26 by referring to various sections in the Elsawy reference, each citation referring to either N2 source 54 or N2 source 66 of Elsawy as being Applicants "first supply of drying fluid." Applicants maintain their assertion that the N2 gas output from the N2 source 66 of Elsawy during a purge step is not a "first supply of drying fluid," as claimed, because there is no teaching or suggestion in Elsawy of "simultaneously supplying" (emphasis added) N2 gas supplied from N2 source 66 with the abovementioned combination of the heated N2 gas received from N2 source 54 and IPA in IPA chamber 16 via valve 56. Instead, N2 source 66 is supplied to the vessel 12 to purge the vessel 12 of air at a different time, and in a different step, than the combination of the heated N2 gas received from N2 source 54 and IPA (see Elsawy, FIG. 2 and column 6, lines 34-37).

In addition, Applicants maintain their assertion that the heated N2 gas received from N2 source 54 is not a "first supply of drying fluid," as claimed, because there is no teaching or suggestion in Elsawy of "simultaneously supplying" (emphasis added) the heated N2 gas received from N2 source 54 with the "combination of" the heated N2 gas received from N2 source 54 and IPA in IPA chamber 16 via valve 56.

Therefore, since Elsawy fails to teach or suggest Applicants' claimed "first supply of drying fluid," it follows that Elsawy fails to teach or suggest "controlling a first ratio of drying fluid to decontaminating fluid in the process chamber by controlling the first rate of supply of the first supply of drying fluid and independently controlling the second rate of supply of the second supply of drying fluid so that the first ratio of drying fluid to decontaminating fluid in the process

chamber is different than a second ratio of drying fluid to decontaminating fluid in the combination of the second supply of the drying fluid and the decontaminating fluid at the outlet of the fluid tank, to optimize the removal of particles from the semiconductor wafers," as claimed in amended independent claim 26.

The Office Action at page 3, first paragraph also cites Elsawy in several places as disclosing IPA vapor and/or N2 gas having a controlled flow rate. However, there is no teaching or suggestion in Elsawy of "controlling a first ratio" of N2 gas to IPA in the vessel 12 by "controlling the first rate of supply of the first supply of drying fluid" and "independently controlling" the "second rate of supply" of the N2 gas supplied from N2 source 54. The Office Action at page 4, first paragraph, states that "it would have been obvious for one skilled in the art to adjust the ratio between the drying fluid and decontaminating fluid to obtain optimum results." However, since Elsawy fails to teach or suggest a "first ratio of drying fluid at a first rate of supply," as claimed, it follows that Elsawy fails to teach or suggest a "first ratio of drying fluid to decontaminating fluid in the process chamber by controlling the first rate of supply of the first supply of drying fluid," as claimed. Specifically, "the ratio" of Elsawy referred to in the Office Action at page 4, first paragraph, is different than a "first ratio," as claimed, since Applicants' claimed "first ratio..." is controlled by the "first rate of supply of the first supply of drying fluid," as claimed. Applicants reiterate that, since Elsawy does not teach or suggest "first rate of supply of the first supply of drying fluid," as claimed, it follows that Elsawy fails to teach or suggest a "controlling a first ratio of drying fluid to decontaminating fluid in the process chamber by controlling the first rate of supply of the first supply of drying fluid...," as claimed.

In addition, since Elsawy fails to teach or suggest "providing a first supply of drying fluid at a first rate of supply," it follows that Elsawy further fails to teach or suggest a "first supply of drying fluid" at a "first rate of supply being provided at the same time as" a "second supply of drying fluid" at a "second rate of supply," as claimed in amended independent claim 26.

In view of the above, it is submitted that Elsawy fails to teach or suggest the present invention set forth in amended independent claim 26. Reconsideration and removal of the rejections of independent claim 26, and dependent claims 27-38 thereon, under 35 U.S.C. 103(a) based on Elsawy are respectfully requested.

Closing Remarks

It is submitted that all claims are in condition for allowance, and such allowance is respectfully requested. If prosecution of the application can be expedited by a telephone conference, the Examiner is invited to call the undersigned at the number given below.

Respectfully submitted,

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